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A Revision of the North American species of the genus *Cracca*.

BY ANNA MURRAY VAIL.

The genus *Cracca* was established by Linnaeus first in Fl. Zey. 139-141 (1747) and then in Sp. Pl. 752 (1753), the genus being based on *Cracca Virginiana*. In the Sp. Pl. Ed. 2, 1062 (1763) it was *Galega Virginiana*, and after that the synonymy becomes more and more complicated and names for the genus appeared in quick succession among which are: *Colinil* Adans. 1763; *Needhamia* Scop. 1777; *Brissonia* Neck. 1790; *Reinera* Moench, 1802; and finally *Tephrosia* Pers. 1807, under which all the Linnaean species of *Cracca* have been described until 1891, when Kuntze in Rev. Gen. Pl. 173 transferred them all to the original generic title.

Bentham in Oerst. Kjoeb. Vidensk. Meddel, 8 (1853) established a genus *Cracca* based on a West Indian species, *Galega Caribaea*, Jacq. Am. 212, t. 125 (1781). The six known species of which genus have been transferred by Kuntze, Rev. Gen. Pl. 164 to the genus *Brittonamra*.

Bentham and Hooker in 1867 gave the number of the species of *Tephrosia* as 90, of which some 16 are ascribed to Africa and America. Taubert, in Engler & Prantl Nat. Pfl. part 101: 269 (1894), gives 120 as the total of species, ascribing few to America. The following revision is an attempt to clearly describe especially the rather difficult Southern State species. As far as is known twelve species are native within the boundaries of the United States and two *C. purpurea* and *C. cinerea* are cosmopolitan plants, the latter known in North America only from ballast ground in Alabama. The Mexican and tropical American species are as yet imperfectly known and are more numerous than it is supposed.*

The genus is accepted as described by Bentham and Hooker, under *Tephrosia*.

* The following species appears to be undescribed:

CRACCA SCHOTTII n. sp.

Perennial from a somewhat woody base, more or less cinereous or silvery-strigose throughout. Stems branching, angled, 3 dm. or more high, erect or decumbent. stipules 4-7 mm. long, subulate, persisting; petioles 1-25 cm. long; leaves 4-7 cm. long, obovate-oblong in outline; leaflets 5-7, obovate or obovate-oblong, 1-2.5 cm. long, 5-15 mm. wide, retuse, minutely apiculate, strigillose above, silvery or cinereous-

ARTIFICIAL KEY TO THE NORTH AMERICAN SPECIES.

Flowers few or crowded in oblong panicles or racemes at the summit of the simple or branched stems (somewhat elongated and spicate in *C. leiocarpa*).

Leaflets linear-oblong or elliptical, panicles sessile or short-peduncled.

Stems erect, simple; pubescence on the sessile, crowded panicle silvery; legume cinereous-pubescent or villous 1. *C. Virginiana*.

Stems erect, branching; pubescence on the sessile or short-peduncled, crowded panicle tawny; legume rusty or tawny, villous or tomentose. 2. *C. leucantha*.

Stem erect, sub-simple or branching; pubescence on the short-peduncled panicle appressed-cinereous; legume yellowish, glabrous 3. *C. leiocarpa*.

Leaflets obovate or sub-orbicular; panicles long-peduncled.

Stems prostrate or ascending; legume yellowish, velvety pubescent.

4. *C. Lindheimeri*.

Flowers fascicled or more or less remote forming a somewhat spicate long-peduncled inflorescence.

Stems erect, pilose with mostly spreading rusty hairs; leaflets 9-25 cuneate-oblong. 5. *C. onobrychoides*.

Stems decumbent or ascending, pilose with reflexed or spreading rusty hairs; leaflets 5-15, oval or oblong, or in the variety linear-oblong. 6. *C. spicata*.

Flowers scattered, single or geminate forming a slender, elongated, spicate inflorescence, much exceeding the leaves. 7. *C. purpurea*.

Flowers single or geminate, scattered at the summit of slender ancipital peduncles, mostly exceeding the leaves (often shorter in *C. ambigua*); flowers white, turning reddish or purple.

Petioles much longer than the leaflets.

Stems erect, very slender, flexuous; leaflets linear. 8. *C. angustissima*.

Stems trailing or assurgent; peduncles and leaves erect; leaflets oblong or cuneate-oblong. 9. *C. ambigua*.

Petioles the length of or shorter than the leaflets (leaves sessile or nearly so in *C. chrysophylla*).

Stems decumbent or assurgent, slender; leaflets mostly acute at each end, reflexed. 10. *C. hispidula*.

Stems assurgent, leaflets oblong-obovate. 11. *C. Smallii*.

Stems prostrate, spreading.

Leaflets 1-7 cuneate-obovate, silky-hirsute beneath.

12. *C. chrysophylla*.

strigose and somewhat glaucous beneath, the terminal one usually considerably larger than the lateral ones; racemes 1 dm. or less long; flowers few, 6 or 7 mm. long, scattered along the slender ancipital peduncle; bracts minute, setaceous; calyx-teeth setaceous, as long as the tube; corolla rose-purple; vexillum minutely hirsute; legume 3-5 cm. long, 4 mm. wide, straightish, strigose; seeds 5-6, oblong-ovoid, truncate at the ends, brownish.

Nearest to *C. purpurea*, from which it differs in the apparently constant broadly obovate leaflets.

U. S. Colombia, Cartajena, Schott, Leguminosæ No. 16; Ruatan Island, Bay of Honduras, G. F. Gaumer, No. 50, 1886.

Types in Herb. Columbia College (Schott.) and Herb. U. S. Depart. Agric. (Gaumer).

Leaflets 5-13-oblong or oblong-obovate, strigose beneath.

13 *C. Floridana*.

Flowers few, in short-peduncled somewhat spicate racemes, exceeding the leaves.

Stems prostrate or ascending; leaflets, 13-17, oblong or linear-oblong, cinereous-pubescent. 14. *C. cinerea*.

1. CRACCA VIRGINIANA L.

Cracca Virginiana L. Sp. Pl. 752 (1753).

Galega Virginiana L. Sp. Pl. Ed. 2: 1062 (1763).

Tephrosia Virginiana Pers. Syn. 2: 329 (1807).

Perennial from a woody base and long, tough, ligneous root, villous-pubescent or canescent throughout. Stems growing in patches, simple, erect, 3-6 dm. high, angled and striate; leaves elliptical or linear-oblong in outline, 6-10 cm. or more long, subsessile; stipules caducous; leaflets 11-21, 1-3 cm. long, linear-oblong or elliptical obtuse or acutish, apiculate, glabrous or nearly so above, silky-villous beneath, often becoming glabrate with age; raceme terminal, oblong, sessile; pedicels 5-10 mm. long; calyx silky-villous, the teeth acuminate, cuspidate, mostly longer than the tube; corolla cream-colored, streaked with purple or pink; vexillum pubescent on the outer surface; legume 3-5 cm. long, 4-5 mm. wide, straight or somewhat falcate, villous; seeds 4-8 oblong-ovoid, rounded or truncate at the ends, brownish, mottled with black.

Dry sandy soil, throughout the eastern half of the United States and Canada to North Mexico.

Original locality: Virginia, Canada.

Type in Herb. Linn.

CRACCA VIRGINIANA HOLOSERICEA (Nutt.).

Tephrosia holosericea Nutt. Journ. Acad. Phila. 7: 105 (1834).

Tephrosia Virginiana var. *holosericea* Torr. & Gray, Fl. N. Am. 1: 296 (1838).

Stems and racemes densely villous; leaflets sericeous on both sides, often sub-lanceolate and acute; legume densely villous or tomentose.

Arkansas (Nuttall), Illinois (Pitcher), Wisconsin (Lüders), Louisiana (Hale).

Original locality: Plains of Arkansas.

2. CRACCA LEUCANTHA (H. B. K.) Kuntze.

Tephrosia leucantha H. B. K. Nov. Gen. 6: 460, t. 577 (1823).

Cracca leucantha Kuntze, Rev. Gen. Pl. 175 (1891).

Perennial from a stout root, cinereous or rusty villous-pubescent throughout. Stems 3–6 dm. or more high, erect, branching, angled and striate; leaves elliptical in outline, 1 dm. or more long; stipules setaceous, caducous; petioles 1–2 cm. long, leaflets 19–25, 2–3 cm. long, oblong, obtuse, often retuse, apiculate, the terminal one often obovate, minutely pubescent above, silky, cinereous-pubescent or villous beneath; raceme oblong, sessile or short peduncled; pedicels 5–8 mm. long; bracts 5–8 mm. long, villous; flowers 1.5 cm. long; calyx villous, tawny or rusty, the teeth acuminate, shorter, or as long as the tube, corolla cream-colored(?), vexillum pubescent on the outer surface; legume 3–4 cm. long, straight or somewhat falcate, spreading, rusty-villous or tomentose; seeds 6–9, oblong-ovoid, pale greenish, smooth.

Very close to *C. Virginiana*, from which it differs in the branching stems, more numerous leaflets, and the tawny pubescence of the inflorescence and legumes.

Arizona, New Mexico, Mexico.

Original locality: Near Guanajuato, South Mexico.

3. CRACCA LEIOCARPA (A. Gray) Kuntze.

Tephrosia leiocarpa A. Gray, Pl. Wright. 2: 36 (1853).

Cracca leiocarpa Kuntze, Rev. Gen. Pl. 175 (1891).

Perennial from a thick, lignescent root, appressed cinereous-pubescent. Stems 3 dm. or more high, many from the same root, sub-simple, angled and striate; stipules 4–6 mm. long, setaceous, persisting; petioles 1–3 cm. long; leaves linear-oblong in outline; leaflets 17–12 or more, linear-oblong, 2–4.5 cm. long, 5–7 mm. wide, obtuse or acutish, apiculate, glabrous above, sericeous and cinereous beneath; racemes terminal and axillary, short-peduncled, exceeding the leaves; bracts caducous; pedicels 5–8 mm. long; flowers 2 cm. or less long; calyx cinereous, the subulate teeth as long as the tube; corolla purplish; vexillum minutely pubescent; legume 3–5 cm. long, 6 mm. wide, straight, yellowish, glabrous; seeds about 10, sub-orbicular or ovoid, brownish. Mature seeds not seen.

New Mexico, Arizona, Mexico.

Original locality: New Mexico, Wright (No. 965) and North Mexico.

Authentic specimen in Herb. Columbia College.

4. CRACCA LINDHEIMERI (A. Gray) Kuntze.

Tephrosia Lindheimeri A. Gray, Bost. Journ. Nat. Hist. 6: 172 (1850).

Cracca Lindheimeri Kuntze, Rev. Gen. Pl. 175 (1891).

Perennial from a tuberous and ligneous root, cinereous-pubescent or sericeous throughout. Stems prostrate or ascending, rather stout, flexuous, branching, spreading, 6–12 dm. long, more or less angled; leaves oblong, linear-oblong or obovate-oblong in outline; stipules somewhat persisting; leaflets 9–17, roundish-obovate, nearly sub-orbicular, or obovate-cuneate, 2–3 cm. long, apiculate, pubescent above, densely sericeous or velvety-pubescent beneath; racemes loosely many-flowered; peduncle 1–2 dm. long; flowers 1.5–2 cm. long; pedicels and bracts 5–8 mm. long; calyx sericeous, the acuminate teeth about the length of the tube; corolla red-purple, vexillum pubescent; legume 3–4 cm. long, 5–9 mm. broad, undulate, densely velvety-pubescent, tawny or yellowish; seeds about 4, broad, nearly orbicular, brownish.

Texas, New Mexico, North Mexico.

Original locality, Muskit prairies, on the Liano, Lindheimer (No. 592).

Type in Herb. Columbia College.

5. CRACCA ONOBRYCHOIDES (Nutt.) Kuntze.

Tephrosia onobrychoides Nutt. Journ. Acad. Phila. 7: 104 (1834).

Tephrosia angustifolia and *T. multiflora* Featherman, Bot. Rep. Louisiana Univ. 73 (1871).

Cracca onobrychoides Kuntze, Rev. Gen. Pl. 175 (1891).

Perennial from a somewhat woody base, more or less pilose with spreading rusty hairs throughout. Stems erect, somewhat stout, simple or branching, flexuous, striate and angled above; stipules 8–12 mm. long, often persisting; petioles 1–3 cm. long; leaves oblong or linear-oblong in outline, 1–1.6 dm. long; leaflets 13–25, 2–5 cm. long, cuneate-obovate or oblong, obtuse, often retuse, apiculate, pubescent or glabrate above, more or less closely silky-pilose beneath; raceme terminal or axillary, rusty-villous or rarely glabrate, 3–6 dm. long; bracts 5 mm. long, subulate, mostly caducous; pedicels slightly longer than the bracts; flowers 1–1.5 cm. long, 2–several together on alternate nodes often the whole length of the peduncle; upper calyx-teeth shorter than the tube, the lower one subulate and longer; corolla white turning to pale scarlet; vexillum pubescent on the outer surface, green toward the middle; legume 3–5 cm. long, 5 mm. wide, linear, acute, somewhat falcate, spreading, puberulent; seeds 6–10, round-oblong. Mature fruit not seen.

Arkansas, Indian Terr., Louisiana, Alabama, Texas.

Original locality: In the plains of Arkansas.

6. CRACCA SPICATA (Walt.) Kuntze.

Galega spicata, Walt. Fl. Car. 188 (1788).

Galega villosa Michx. Fl. Bor. Am. 2: 67 (1803).

Tephrosia villosa Pers. Syn. 2: 329 (1807).

Tephrosia paucifolia Nutt. Gen. 2: 119 (1818).

Tephrosia hispida DC. Prodr. 2: 250 (1825).

Galega paucifolia Curtis, Bost. Journ. Nat. Hist. 1: 122 (1837).

Tephrosia spicata Torr. & Gray, Fl. N. Am. 1: 296 (1838).

Tephrosia mollissima Bertol. Bot. Misc. 9: 10, t. 3. (Bot. Zeit. 9: 902) fide A. Gray, Am. Journ. Sci. (2) 14: 115 (1852).

Cracca spicata Kuntze, Rev. Gen. Pl. 175 (1891).

Perennial from a long, stout root, more or less rusty-hirsute, or villous throughout. Stems decumbent or ascending, simple or diffusely branching, flexuous, spreading, somewhat angled above, clothed with mostly spreading or reflexed rusty hairs and a shorter, retrose, appressed pubescence, often becoming glabrate with age below; stipules 5–10 mm. long, sometimes persisting; leaves 5 cm.–1.5 dm. long, oblong or linear-oblong in outline, the upper ones subsessile, the lower short petioled (1–3 cm.); leaflets 5–15, 1–2.5 cm. long, 7–12 mm. wide, oval, oblong or cuneate-oblong (the terminal ones often obovate), obtuse, mucronate, often reflexed, minutely pubescent, silky-villous or glabrous above, rusty-villous beneath, often reflexed; racemes terminal and axillary; peduncles ancipital, 1–3 dm. long; bracts 5–10 mm. long, subulate, mostly persisting; flowers 1–1.5 cm. long, remote, few or several together at the summit of the peduncle; calyx-teeth subulate, hispid, slightly longer than the tube; corolla white, turning purple; vexillum pubescent; legumes 3–5 cm. long, 5–6 mm. wide, linear, acute, straightish; seeds 8–12, ovoid, brown.

Differing from *C. onobrychoides* in its more slender and decumbent habit, fewer flowers and less silky pubescence. Growing in low sandy pine lands mostly among grasses, notable for its ascending stems and erect peduncles. Depauperate specimens with the flowers in the axils of the upper leaves have been collected in Florida. Virginia to Florida, westward to Tennessee and Mississippi.

Original locality not given.

Type in Herb. Walter.

CRACCA SPICATA FLEXUOSA (Chapm.)

Tephrosia flexuosa Chapm.; Torr. & Gray, Fl. N. Am. 1: 297 (1838).

Tephrosia hispidula γ Torr. & Gray, Fl. N. Am. 1: 297 (1838).

Stems becoming glabrate; leaflets 2–7 pairs, linear, acute, emarginate, reflexed, the terminal one much elongated.

Florida and Alabama.

Original locality: Florida (Chapman).

Type in Herb. Columbia College.

7. CRACCA PURPUREA L.

Cracca purpurea L. Sp. Pl. 752 (1753).

Galega piscatoria Ait. Hort. Kew. 3: 71 (1789).

Tephrosia leptostachya DC. Prodr. 2: 251 (1825).

Tephrosia adscendens Macfad. Fl. Jam. 257 (1837).

Tephrosia tenella A. Gray, Pl. Wright, 2: 36 (1853).

Annual or perennial from a slender woody base, glabrate or strigillose. Stems 1–6 dm. high, erect or ascending, branching, spreading, strigillose on the angles, often glabrate or glabrous and glaucous, striate above; stipules setaceous, often persisting; petioles 1–3 cm. long; leaves 6 cm.–1 dm. long, oblong or linear-oblong in outline; leaflets 7–17, 2–5 cm. long, linear, linear-oblong or oblong-cuneate, obtuse, or acute at each end, apiculate, glabrous above, strigillose or glabrate, lighter and often glaucous beneath; racemes terminal and axillary, 1–2 dm. long; peduncles ancipital; flowers 5–10 mm. long, very short pedicelled; bracts setaceous; calyx-teeth as long as the tube; corolla white, turning purple; vexillum minutely pubescent; legume 3–5 cm. long, 3–4 mm. wide, linear or slightly falcate, strigillose or glabrate; seeds 6–10, oblong brown.

A very variable species with a long and complicated list of synonyms. Known everywhere in tropical and subtropical countries. Two distinct strains have been collected in the United States, the broader-obtuse leaved form occurs in East Florida, and the narrow acute-leaved form (*C. tenella*) in Texas, Arizona, etc.

O. Kuntze (Rev. Gen. Pl. 173) has united *C. purpurea* and several other species to *C. villosa* L. The latter has a villous calyx with long, acuminate teeth and a short reflexed, tomentose legume and is not known from America.

Florida, Texas, New Mexico, Arizona, Mexico. Also in Eastern Central America, Eastern South America to South Brazil, and in the West Indies.

Original locality: Ceylon.

8. CRACCA ANGUSTISSIMA (Shuttlew.) Kuntze.

Tephrosia angustissima Shuttleworth; Chapm. Fl. 96 (1860).

Cracca angustissima Kuntze Rev. Gen. Pl. 174 (1891).

Perennial from a somewhat woody base, very slender, glabrate or minutely pubescent. Stems 3-6 dm. long, prostrate, diffusely branching, flexuous; stipules 3-7 mm. long, setaceous, persisting; petioles 3-9 cm. long; leaves linear-oblong in outline; leaflets 5-17, 1-3 cm. long, 2-3 mm. wide, linear, acute at each end, minutely pubescent beneath; racemes terminal or axillary; peduncles 5-10 cm. long; flowers 8-12 mm. long, solitary or geminate; bracts setaceous, persisting; pedicels 7-10 mm. long; calyx-teeth subulate, about the length of the tube; vexillum pubescent; legume 3 cm. or more, 4 mm. wide, minutely hirsute, somewhat inflated at maturity; seeds 6-8, ovoid, truncate at the ends, black.

Pine barrens, South Florida, near Eau Gallie, Indian River, A. H. Curtiss, N. Am. Pl. No. 584.

Original locality: South Florida, Rugel.

9. CRACCA AMBIGUA (M. A. Curtis) Kuntze.

Galega ambigua Curtis, Bost. Journ. Nat. Hist. 1: 121 (1837).

Tephrosia hispidula β. Torr. & Gray Fl. N. Am. 1: 297 (1838).

Tephrosia ambigua Chapm. Fl. 96 (1860).

Cracca ambigua Kuntze, Rev. Gen. Pl. 174 (1891).

Perennial from a woody base, and long, ligneous root, hirsute with short spreading, somewhat viscid hairs. Stems 3-4 dm. or more high, trailing or assurgent, often purplish, dichotomously branching, straggling, angled; stipules 5-7 mm. long, lanceolate, persisting; petioles 3-8 cm. long; leaves 7 cm.-1.5 dm. long, remote, linear-oblong in outline; leaflets 7-11, linear-oblong to cuneate-oblong or obovate, 2-14 cm. long, 5-15 mm. wide, acutish or mostly obtuse, apiculate, coriaceous, glabrous and yellowish-green above, appressed hirsute with whitish hairs and the veins often turning reddish or purplish beneath; peduncles 1-1.5 cm. long, ancipital; flowers few, 10-12 mm. long; bracts 5 mm. long, persisting; calyx-teeth subulate, as long as the tube; vexillum pubescent; legume 4 cm. or more long, 4 mm. wide, straightish; seeds 8-13, ovoid, brown, variegated with black.

High pine lands, dry sandy soil. Trailing, with ascending and almost erect leaves, leaflets and peduncles, or stems ascending with a somewhat bushy habit.

North Carolina and Florida, westward to Mississippi.

Original locality : Sandy woods near Wilmington, North Carolina.

Type in Herb. Columbia College.

10. CRACCA HISPIDULA (Michx.) Kuntze.

Galega hispidula Michx. Fl. Bor. Am. 2: 68 (1803).

Tephrosia hispidula Pers. Syn. 2: 329 (1807).

Tephrosia gracilis Nutt. Gen. 2: 119 (1818).

Tephrosia elegans Nutt. Journ. Acad. Phila. 7: 105 (1834).

Cracca hispidula Kuntze, Rev. Gen. Pl. 174 (1891).

Perennial from a slender, woody base, minutely appressed-hispid or glabrate. Stems 1–3 dm. or more long, decumbent or assurgent, dichotomously branching, straggling, angled; stipules 2–5 mm. long, subulate, sometimes persisting; leaves 3–6 cm. long, linear-oblong in outline, short-petioled, (5–10 mm.) the upper ones often sessile; leaflets 7–13, elliptical, oval-oblong, or linear-oblong, 8 mm.–2 cm. long, 4–8 mm. wide, acutish, sometimes obtuse, apiculate, reflexed, glabrous above, appressed hirsute with whitish hairs and the veins often turning purplish beneath; peduncles terminal and axillary, ancipital, 5–10 cm. long; flowers solitary or geminate, scattered at the summit of the peduncle, 10–12 mm. long; bracts 2–5 mm. long, setaceous; calyx-teeth acute as long as the tube; vexillum minutely pubescent; legume about 4 cm. long, 4–6 mm. wide, straightish or slightly falcate, minutely hispid; seeds 8–12, ovoid or nearly orbicular, brownish.

Low pine lands, sandy soil, stems ascending, rarely prostrate or trailing, leaves and peduncles erect, leaflets reflexed, smaller and more acute than the other species in this section.

Virginia and North Carolina to Florida, westward to Louisiana.

Original localities: Virginia, Carolina and Georgia.

Type in Herb. Michaux.

11. CRACCA SMALLII.

Cracca intermedia Small, Bull. Torr. Club, 21: 303 (1894), not *Tephrosia intermedia* Graham; Hook. Fl. Brit. Ind. 2: 112 (1879).

Perennial from a woody base, pubescent throughout and somewhat viscid. Stems 4–6 dm. long, branched from the base, spreading, assurgent, flexuous, more or less angled; stipules subulate, caducous; leaves oblong-obovate in outline, 6–12 cm. long; petioles 1–cm. long; leaflets 3–11, oblong-obovate, 1–3 cm. long, 6–14 mm. wide, glabrous and yellowish-green above, strigose with whitish

hairs and becoming somewhat purplish beneath, truncate at the apex, apiculate; peduncles 8 cm., 1–5 dm. long; bracts subulate, 5–7 mm. long; flowers 1 cm. long, mostly solitary or geminate, remote; calyx-teeth lanceolate, acuminate; vexillum minutely pubescent; legume 3.5–4 cm. long, about 4 mm. wide, straightish, strigillose; seeds 5–9, oblong or oblong-ovoid, compressed, smooth, variegated with black.

Dry and poor “blackjack thickets.” Differing from *C. chrysophylla* in its assurgent habit, the greater number and shape of the leaflets, the smaller flowers and larger seeds, as well as the character of the pubescence on the under surface of the leaflets.

Florida, Chapman, Curtiss; Georgia, Boykin.

Original locality: near Jacksonville, Florida (Curtiss).

Type in Herb. Columbia College.

12. CRACCA CHRYSOPHYLLA (Pursh) Kuntze.

Tephrosia chrysophylla Pursh, Fl. Am. Sept. 489 (1814).

Galega prostrata Nutt. Gen. 2: 120 (1818).

Cracca chrysophylla Kuntze, Rev. Gen. Pl. 174 (1891).

Perennial from a long ligneous root. Stems prostrate, 3 dm.–1 m. long, dichotomously branching, clothed with a close, short, somewhat viscid and spreading silvery or tawny pubescence; stipules subulate, caducous; leaves 3–5 cm. long, oval in outline, sessile or very short petioled; leaflets 3–9, (rarely 1-foliate,) 1–3 cm. long, 7 mm.–2 cm. wide, cuneate-obovate, obtuse, often retuse, sometimes apiculate, coriaceous, glabrous and yellowish-green above, silky hirsute and somewhat lighter or rusty beneath, the terminal one often conspicuously larger than the lateral ones; peduncles 4–6 cm. long, axillary, ancipital; flowers 1–1.5 cm. long, few; bracts 5 mm. long, subulate, persisting; calyx-teeth acuminate, as long as the tube; vexillum minutely pubescent; legume 3–4 cm. long, 5–7 mm. wide, minutely hispid, straightish, erect or spreading; seeds 8–10, oblong, ovoid, or sub-orbicular; brownish or greenish, variegated with black.

Pine lands. Truly prostrate, with prostrate leaves, widely spreading, forming broad mats.

Georgia to Florida and westward.

Original locality: In Georgia.

CRACCA CHRYSOPHYLLA CHAPMANNI n. var.

A low prostrate slender plant with stems 2 dm. or more long; leaves 1–2 cm. long; leaflets 5–10 mm. long, oblong or obovate,

apiculate, glabrous above, appressed silky-hirsute beneath ; legume 2 cm. long, 3 mm. wide, minutely hirsute, 4-7 seeded.

St. Joseph's, Florida, Chapman.

Type in Herb. Columbia College.

13. CRACCA FLORIDANA n. sp.

Perennial from a short, somewhat creeping ligneous root. Stems prostrate, 2-6 dm. or more long, dichotomously branching, spreading, angled above, clothed with a short appressed or spreading often somewhat viscid pubescence ; stipules 3-5 mm. long, subulate, often persisting ; petioles 1-2.5 cm. long ; leaves 4-10 cm. long, oblong or rarely linear-oblong in outline ; leaflets 9-13, oblong or oblong-obovate obtuse or truncate at the apex apiculate, 1.5-3 cm. long, 5-12 mm. wide, glabrous and yellowish-green above, lighter, strigose with whitish hairs and the veins turning reddish beneath ; peduncles terminal and axillary, 7 cm.-2 dm. long ; bracts subulate ; pedicels 5-8 mm. long ; flowers solitary or geminate, 1-1.5 cm. long ; legume 3-4 cm. long, 4 mm. wide, erect, straight, strigillose ; seeds 6-10, oblong, ovoid, grayish or brownish variegated with black.

Differing from *C. chrysophylla* in its more numerous, narrower leaflets and the pubescence of the lower surface, which is that of *C. Smallii*. It is very close to the latter, from which it differs however, in its truly prostrate and spreading habit, narrower and more numerous leaflets.

Central Florida, G. V. Nash, Nos. 494½, 1198, 1263, 1334, 1552, 1615. Louisiana, New Orleans, Dr. Ingalls.

Types in Herb. Columbia College.

14. CRACCA CINEREA (L.) Morong.

Galega cinerea L. Amœn. Acad. 5: 403 (1759).

Tephrosia cinerea Pers. Syn. 2: 528 (1807).

Cracca cinerea Morong, Ann. N. Y. Acad. Sci. 7: 79 (1892).

Perennial from a stout, ligneous root and woody base. Stems prostrate, diffuse, or ascending, 3-6 dm. or more long, appressed cinerous-pubescent, or with somewhat spreading rusty hairs above, becoming glabrate with age, angled and channelled above ; stipules 3-8 mm. long, subulate, acuminate, persisting ; petioles 5 mm. to 1.5 cm. long ; leaves oblong in outline, 4-10 cm. long ; leaflets 16-17 oblong, linear-oblong, 2-5 cm. long, 4-8 mm. broad, the basal and terminal ones often obovate-oblong, obtuse or acutish at the apex, acute at the base, glabrous above, cinereous-strigose or pubescent beneath, becoming often glabrate with

age; racemes 7–8 cm. long; flowers 1 cm. long, geminate or in clusters, scattered; bracts subulate or setaceous, persisting; calyx-teeth acuminate, as long as the tube; corolla purplish, vexillum pubescent; legume 3–4 cm. long, 4 mm. wide, spreading, cinereous-pubescent or glabrate, straight; seeds 6–9, ovoid, somewhat truncate at the ends, brown.

Ballast ground, Mobile, Alabama (Ch. Mohr); Mexico and the West Indies, etc.

Original locality: Jamaica.

I am much indebted to Dr. N. L. Britton for his help and counsel in this study and for the use of the Herbarium of Columbia College. Mr. G. V. Nash has given me valuable assistance with copious field notes of the Florida species.

Mr. Coville also very kindly loaned me the collection of the United States Department of Agriculture for examination.

Contributions to American Bryology.—IX.

BY ELIZABETH G. BRITTON.

A REVISION OF THE GENUS *SCOULERIA* WITH DESCRIPTION OF ONE NEW SPECIES.

(PLATE 227.)

The genus *Scouleria* was founded by Wm. Hooker in 1830, on specimens collected by Dr. Scouler at Observatory Inlet, described as *S. aquatica*, and subsequently distributed in Drummond's *Musci Americani* as No. 63, collected in the Columbia and Portage Rivers. A few autograph duplicates of Dr. Scouler's specimens were also distributed in this country, and Dr. Torrey was fortunate in possessing one of them, as well as a set of Drummond's Mosses.

In 1851 C. Mueller transferred *Scouleria aquatica* to *Grimmia* as *G. Scouleri*, and Lesquereux and James in the Manual 1884 followed his example. Mitten in 1869 also subordinated the genus to *Grimmia*, describing one new species *Grimmia patagonica* (Journ. Linn. Soc. 12: 96, 1869), which Jaeger (Adumb. 1875) changed to *Scouleria patagonica*. Since then the genus has been